SUMMARY AND CONCLUSIONS

Five Landsat Thematic Mapper (TM) scenes covering 97% of the Albemarle-Pamlico estuarine system drainage basin were used to classify land use and land cover. Digital TM data were physiographically stratified, converted to a Lambert Conformal Conic projection and classified into 18 classes using a supervised approach and statistics from TM bands 3, 4 and 5 (red, near infrared and middle infrared). Classification accuracies were determined based on 1,931 verification sample sites. Leaf-off conditions and, near the coast, excessive soil moisture limited differentiation of certain vegetation types particularly within the Tidewater region. Mapping accuracies were relatively low for Urban and Built-up land (46%) and ranged from 73% to 97% for five other Level I categories (Water, Agriculture, Forestland, Wetlands and Barren Land).

Image data were processed and classified into land use and land cover classes at the Computer Graphics Center (CGC) at North Carolina State University and then transferred to the North Carolina Center for Geographic Information & Analysis (CGIA). At the CGIA, image data were filtered using a standard 5x5 mode filter, converted to the ARC/INFO data format and partitioned by USGS 1:100,000 scale map boundaries. Land use/land cover data and products can be obtained from CGIA by USGS 1:100,000 map windows or by county in a variety of formats. Prospective users need to be aware that these data require large amounts of disk storage. Data are georeferenced to the N.C. State Plan Coordinate System, but, because of their derivation, mapping discrepancies may exist between this data layer and data layers derived from different mapping methodologies.

Overall, Landsat TM data appeared to be a good source of information for large area inventories of land use/land cover patterns. The resultant map products provide the level of detail and accuracy required regional/basin-level analyses for management and research needs.

RECOMMENDATIONS

The following recommendations should be considered during use of the current land use/land cover inventory:

1. Data are applicable to inventory and research efforts designed to characterize large geographic areas such as the entire Albemarle-Pamlico estuarine system, groups of counties, or basins, but are not appropriate for site-specific evaluations such as characterization of urban infrastructures.

2. Because of low classification accuracies for developed areas and underestimation of forested wetlands, the estimates of these areas should be considered with great caution. Data on road networks or municipal boundaries can be obtained from alternative sources (USGS DLG files, Bureau of Census TIGER files or CGIA